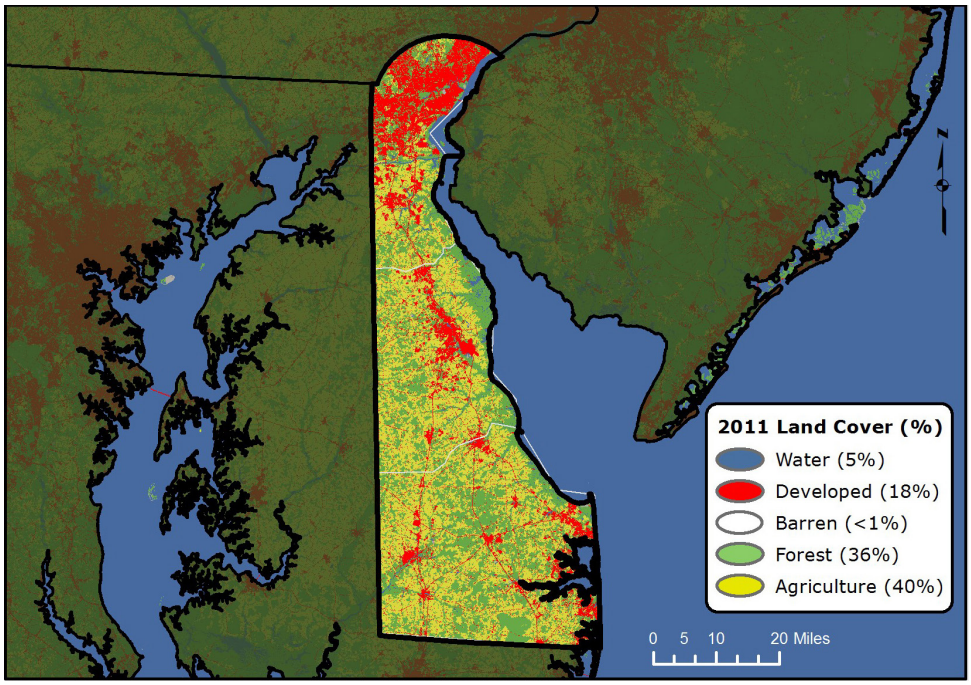
2014 Forest Health highlights

DELAWARE

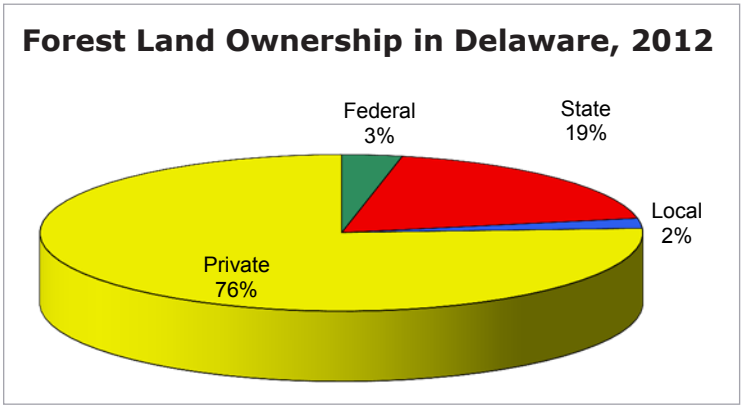
Forest Resource Summary

Delaware's forests presently cover approximately 371,000 acres, roughly one-third of the land area in the State. Delaware has experienced a rapid conversion of forests and agricultural lands to residential and other urban uses since the 1980s.



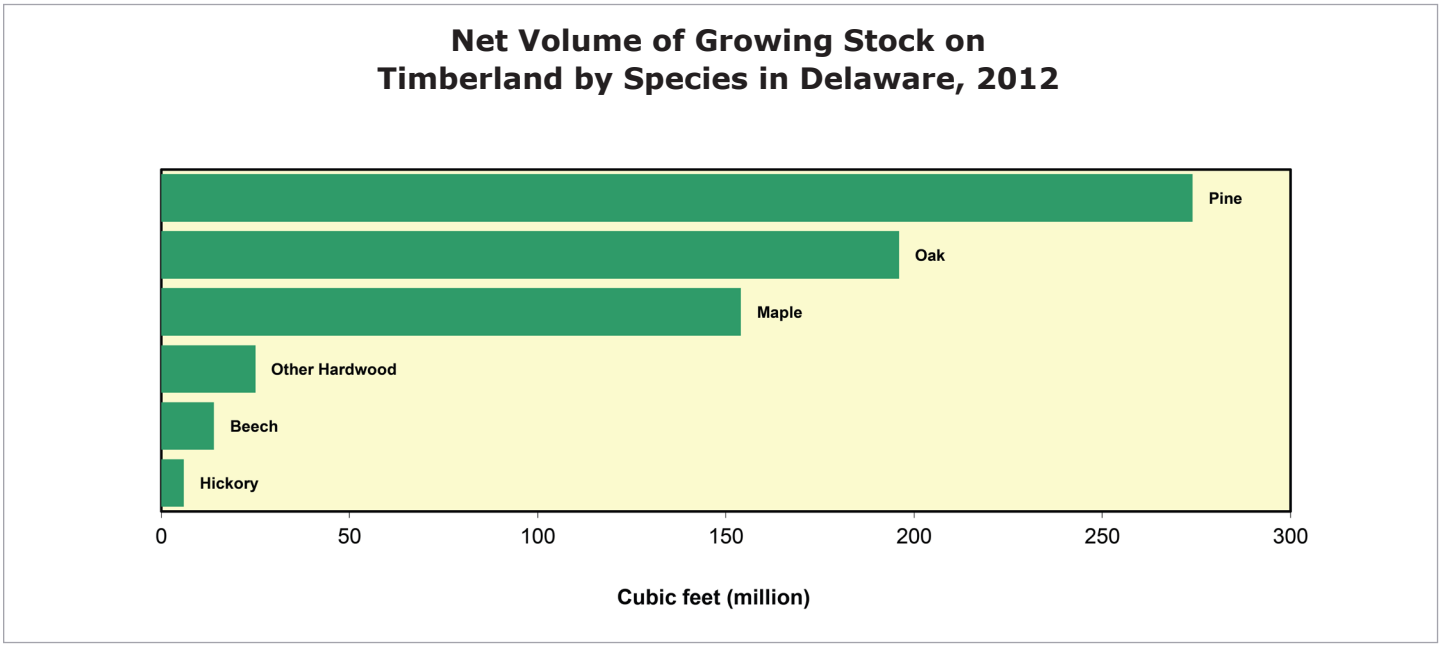
Weather Conditions

A wet spring and weekly rains throughout the summer months made 2014 a good growing season with only a slight dry period in September. Cold 2013/2014 winter temperatures appear to have killed off some insect populations such as southern pine beetle. The cold winter also caused some winter burn of conifers, especially in windbreaks, as well as some dieback of less winter hardy ornamentals such as crape myrtle.



Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.



Forest Pest Issues

Gypsy Moth

Gypsy moth activity remained very low for 2014. No gypsy moth defoliation was noted from aerial flights, ground checks, or from Forest Disturbance Monitor satellite data.

Emerald Ash Borer (EAB)

Ash represents only about 1 percent of Delaware's rural forests but is a significant component of the urban forest in some areas. In 2014, the Delaware Forest Service used two survey techniques to look for EAB. First, the Buprestid-hunting wasp *Cerceris fumipennis* was used in a biosurveillance program. Second, visual surveys were carried out at rest areas on Interstate 95 and Route 1. This year, the Plant Industries Section serviced 60 purple prism traps throughout the State with help from the Delaware Forest Service locating traps in Sussex County. EAB was not detected by any of these methods in 2014.

Asian Longhorned Beetle (ALB)

ALB is a serious threat to a variety of hardwood species, especially the rural and urban maples throughout Delaware. Trapping begun in 2012 was continued in 2014. Nine panel traps were set out in wooded areas near industrial areas (especially pallet-using industries) and areas with high travel. Visual surveys for ALB were also conducted along high-travel corridors in the northern half of the State. No ALB was detected in 2014.

Sirex Woodwasp (*Sirex noctilio*)

Sirex noctilio presents a threat to loblolly pine, the mainstay of the forest products industry in southern Delaware. In 2014, Lindgren traps baited with a Sirex blend were hung at nine sites throughout the State. Sirex has yet to be detected in Delaware, although native Siricids were collected.

Other Insects

There was heavy defoliation of cherries due to eastern tent caterpillar throughout the State in the spring. For 2014, service foresters reported beech blight aphid, clear-wing borers, and bark beetles damaging ash; some pine sawfly damage; many scale insect issues on ornamentals; and the usual bagworms causing damage on Leyland cypress.

Disease Concerns

Hypoxylon Canker (*Hypoxylon atropunctatum*)

From service forester's reports and the aerial survey, it appears that the amount of *new* mortality from Hypoxylon canker is very low this year. The cumulative effects of drought are still of concern, but receding due to two straight years of adequate summer rain.

Other Diseases

Ash rust (*Puccinia sparganioides*) created a widespread defoliation event on green and white ash trees around northern New Castle County this spring. Anthracnose and fungal leaf spots on many ornamentals and woodland hardwood trees were at high levels this spring and summer.

Ash rust defoliated green and white ash trees in northern New Castle County in the spring of 2014.

Forest Health Monitoring

Salamander Boards

Since 1999, the Delaware Forest Service has conducted salamander board population studies of primarily redback salamanders (*Plethodon cinereus*). Fifteen years of data have shown a slight downward trend in salamanders encountered on the 11 permanent study sites; however, variability from year to year is quite large. The Delaware Forest Service plans to continue the study for the foreseeable future to increase the confidence in the trend data.

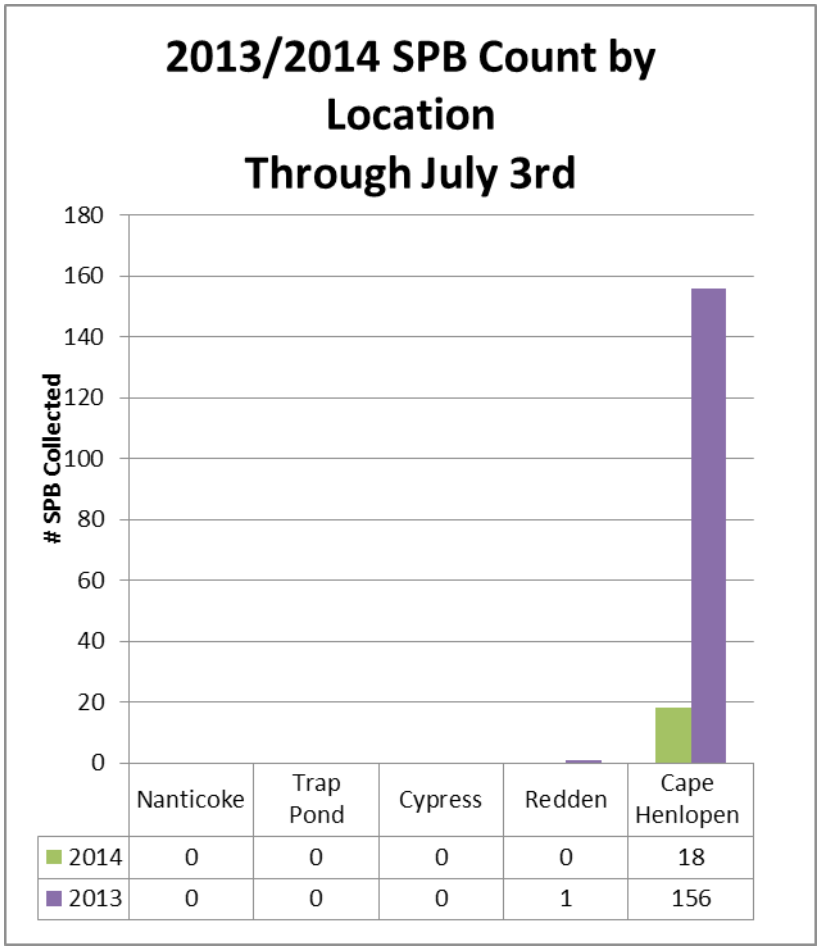
Deer Exclosures

The Delaware Forest Service currently has 15 fenced deer exclosures. Data from the 2013 remeasurement of seedling numbers and heights has shown that total seedling length (heights of all seedlings added together) does not correlate well with amount of time inside the fenced exclosure for 14 of the 15 exclosures. An exclosure at the Mt. Cuba reserve in northern suburban Delaware, where deer densities are estimated to be around 135 deer per square mile, was the exception. Canopy coverage levels at all fenced and control plots were measured with a densiometer in June to measure variability in canopy light levels between plots. The fenced plots averaged 94 percent canopy coverage; the control plots averaged 91 percent, with only one pair that had a significant difference.

Southern Pine Beetle (SPB)

Delaware participated in the Southwide SPB Pheromone Study again this year in four loblolly pine stands in Sussex County. Loblolly pine is a major forest component in Sussex County and is a mainstay of the forest industry there. There were no SPB collected on any of the four Southwide study traps this

year. A cold winter spell in January was very likely responsible for these numbers. The SPB trap at Cape Henlopen State Park collected a total of 18 beetles, a significant decline from 2013 (156 beetles).



SPB trap count in 2013/2014 by location through July 3, 2014.

References

Land Cover Map:

Jin, S.; Yang, L.; Danielson, P.; Homer, C.; Fry, J.; Xian, G. 2013. A comprehensive change detection method for updating the National Land Cover Database to circa 2011. Remote Sensing of Environment. 132: 159–175.

Forest Land Area by Ownership:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service 2015 update of the RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 2.

Net Volume of Growing Stock on Timberland by Species:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service 2015 update of the RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 23 & 24.

U.S. Department of Agriculture
Forest Service
Northeastern Area
State and Private Forestry
11 Campus Blvd., Suite 200
Newtown Square, PA 19073
http://www.na.fs.fed.us

Forest Health Protection
Northeastern Area
State and Private Forestry
180 Canfield Street
Morgantown, WV 26505
304–285–1545

Delaware Department of Agriculture
Delaware Forest Service
2320 South DuPont Highway
Dover, DE 19901-5515
302–698–4500
http://dda.delaware.gov/forestry/protec.shtml#forest_health_mon

February 2015

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